

*Duplicate 9*  
**PUBLIC HEALTH ACT.**

(11 & 12 Vict., Cap. 63.) *(also under 1847)*

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**R E P O R T**

TO THE

**GENERAL BOARD OF HEALTH,**

ON A

**PRELIMINARY INQUIRY**

INTO THE SEWERAGE, DRAINAGE, AND SUPPLY OF  
WATER, AND THE SANITARY CONDITION  
OF THE INHABITANTS

OF THE PARISH OF

**NEW SLEAFORD.**

By WILLIAM RANGER,

SUPERINTENDING INSPECTOR.



LONDON:

PRINTED BY W. CLOWES & SONS, STAMFORD STREET,  
FOR HER MAJESTY'S STATIONERY OFFICE.

1850.

## NOTIFICATION.

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THE General Board of Health hereby give notice, in terms of section 9th of the Public Health Act, that on or before the 29th of June, written statements may be forwarded to the Board with respect to any matter contained in or omitted from the accompanying Report on the Sewerage, Drainage, and Supply of Water, and the Sanitary Condition of the Inhabitants of the Parish of NEW SLEAFORD, or with respect to any amendment to be proposed therein.

By order of the Board,

HENRY AUSTIN, *Secretary.*

*Gwydyr House, Whitehall,*  
18th May, 1850.

## PUBLIC HEALTH ACT (11 and 12 Vict., cap. 63.)

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*Report to the General Board of Health, on a Preliminary Inquiry into the Sewerage, Drainage, and Supply of Water, and the Sanitary Condition of the Inhabitants of the Parish of NEW SLEAFORD, in the County of Lincoln.* By WILLIAM RANGER, Superintending Inspector.

MY LORDS AND GENTLEMEN,

*London, December 20, 1849.*

A PETITION having been presented to the Board on behalf of the inhabitants of the parish of New Sleaford, duly signed, and headed as follows:—

“We, the undersigned inhabitants of the parish of New Sleaford, in the county of Lincoln, being upwards of one-tenth of the inhabitants rated to the relief of the poor of the said parish, do hereby signify to the General Board of Health our desire that the Act of Parliament, 11th and 12th Victoria, cap. 63, for promoting the public health, may be made applicable to the said parish, and that a Local Board of Health of the inhabitants may be formed for the purposes of the said Act:”

pursuant to your instructions I gave the notice required by the said Act, proceeded to Sleaford, and on the 2nd of October, 1848, and following days, instituted a public inquiry with reference to the following matters:—

- The sewage, drainage, and supply of water;
- The number and sanitary condition of the inhabitants;
- The state of the burial-ground;
- The natural drainage areas;
- Existing local boundaries—

and other matters; for the purpose of enabling the Board to judge of the propriety of complying with the request of the petitioners, by applying the Public Health Act, 1848, to the said town of New Sleaford.

### THE REPORT

I have now the honour of submitting to your consideration, is based upon the evidence given by the principal medical men, the churchwardens, and other gentlemen resident in the town, and by the county surveyor; combined with information received from occupiers of tenements at the time of making a domiciliary inspection of their dwellings, especially in the haunts of fever, and other contagious diseases, viz., Hyde's-yard, Payne's and Camomile's-yards, Churchwardens' houses, the neighbourhood of slaughter-

houses, Hackett's-row, Dunkirk, Holme's-yard, Charles'-street, Wilson's-square, Gwinnethe's-row, Playhouse-yard, Bedford's-row, Rural-yard, &c.

In prosecuting this inquiry, I received the cordial support of John H. Boot, Esq., M.D.; John H. Bissill, Esq., surgeon and registrar; R. Coulson, Esq., surgeon; J. Bedford, Esq., medical officer of the Union; M. P. Moore, and M. Goodson, Esqrs., churchwardens; W. Foster, H. Peake, W. Holdich, and C. Steel, Esqrs., solicitors; C. Bissill and R. G. Banks, Esqrs.; Mr. Parry, county surveyor; Messrs. Jackson and Turner, surveyors of highways; Messrs. Kirk, Snow, and Warwick; Messrs. Pinder, Weston, Payne, Smedley, Payne, jun., Heald, Allen, Creasey, Clayton, Nichols, and Tomlinson, relieving officer of the Union. The Rev. Dr. Yerburch was prevented attending from illness.

**GOVERNMENT OF THE TOWN.**—There are no local Acts of Parliament in force having relation to any of the purposes of the Public Health Act, 1848, the governing power being that of the parochial officers.

**PHYSICAL CHARACTER OF THE DISTRICT.**—The town of Sleaford is seated on the banks of the river Slea, at a short distance below its source, in a highly-fertile district, and connected, by means of a canal and the river Wytham with the towns of Boston and Lincoln, and with the Trent navigation.

The principal streets, four in number, designated North Gate, East Gate, West Gate, and South Gate-streets, are remarkably neat, extending at right angles with each other.

The town stands upon the oolite formation, in the lower parts of the parish covered with alluvium (gravel and peat), resting upon a stratum of strong blue clay, making together a depth of about 20 feet, before reaching the oolite.

In prosecuting the inquiry I was not successful in procuring meteorological data, as I had hoped to have done.

The area of the parish is stated at 1,800 acres, and the hamlet of Holdingham, 1,360.

In 1831 the number of inhabited houses amounted to 474, and uninhabited, 31; making a total of 505. And in 1841 the total number amounted to 651, viz., 622 inhabited, 29 uninhabited; showing an increase of 146 houses in 10 years, or 14·6 per year. The population amounted—

|                      |       |
|----------------------|-------|
| In 1801 to . . . . . | 1,483 |
| 1811 . . . . .       | 1,781 |
| 1821 . . . . .       | 2,094 |
| 1831 . . . . .       | 2,450 |
| 1841 . . . . .       | 3,184 |

Thus, in a period of about 40 years, the population has more than doubled in number.

# SLEAFORD.



SCALE.





The annual value of property rated to poors' rates—

|                                    | £.    | s. | d. |
|------------------------------------|-------|----|----|
| In 1815, for Sleaford . . . . .    | 5,504 | 0  | 0  |
| and ,, Holdingham hamlet . . . . . | 1,265 | 0  | 0  |
| In 1847, for Sleaford . . . . .    | 6,931 | 0  | 0  |
| and ,, Holdingham hamlet . . . . . | 1,247 | 0  | 0  |

In the latter year the expenditure for relief of the poor was—

|                             | £.  | s. | d. |
|-----------------------------|-----|----|----|
| In Sleaford . . . . .       | 797 | 0  | 0  |
| Holdingham hamlet . . . . . | 91  | 0  | 0  |

The proportion of deaths to 1,000 of population, on an average of seven years, is 25·3, or 2·3 above the number named in the Public Health Act, in order to admit of inquiry in the absence of any petition being presented to the Board, according to the Registrar-General's return, whilst the number of deaths in New and Old Sleaford, since 1843, furnished by Mr. Moore, was as follows :—

*Deaths in New Sleaford.*

|                                 |          |          |
|---------------------------------|----------|----------|
| 1843 . . . . .                  | 71 = 21  | per 1000 |
| 1844 . . . . .                  | 125 = 37 | „        |
| 1845 . . . . .                  | 77 = 22  | „        |
| 1846 . . . . .                  | 115 = 34 | „        |
| 1847 . . . . .                  | 84 = 24  | „        |
| 1848 . . . . .                  | 74 = 21  | „        |
| 1849, say 48 }<br>in 9 months } | 64 = 19  | „        |

which is equivalent to an average of 87 in each year, or 25 per 1,000.

*In Old Sleaford.*

|                                 |         |          |
|---------------------------------|---------|----------|
| 1843 . . . . .                  | 11 = 31 | per 1000 |
| 1844 . . . . .                  | 11 = 31 | „        |
| 1845 . . . . .                  | 8 = 23  | „        |
| 1846 . . . . .                  | 3 = 9   | „        |
| 1847 . . . . .                  | 7 = 20  | „        |
| 1848 . . . . .                  | 6 = 17  | „        |
| 1849, say 12 }<br>in 9 months } | 16 = 46 | „        |

thus showing an average of 9 in each year, or 25 per 1,000.

In 1841 the proportion of deaths to the population was 1 in 51, and of births 1 in 31, whilst the proportion of deaths from epidemics to population was 1 in 248, and the proportion per cent. of deaths at each interval of death to total deaths was—

|                             |      |
|-----------------------------|------|
| Under 1 year . . . . .      | 25·1 |
| ,, 5 years . . . . .        | 41·4 |
| ,, 15 years . . . . .       | 48·6 |
| ,, 20 years . . . . .       | 51·5 |
| Between 20 and 30 . . . . . | 8·9  |
| ,, 30 and 40 . . . . .      | 5·5  |
| ,, 40 and 50 . . . . .      | 5·2  |
| ,, 50 and 60 . . . . .      | 4·4  |
| ,, 60 and 70 . . . . .      | 8·0  |
| ,, 70 and 80 . . . . .      | 10·7 |
| ,, 80 and 90 . . . . .      | 5·0  |
| 90 and upwards . . . . .    | ·8   |

The average age of all who have died, is 28 years 9 months, a rate of mortality beneath that found in other districts; yet, on the other hand, much higher than classes in good physical circumstances are known to attain.

The pecuniary burdens entailed upon the community by the excessive amount of mortality and sickness should not be lost sight of by those who must bear the expenses of improvement. In the following estimate absolute accuracy is not pretended, for at present this is not attainable; it is offered as a mere approximation. The excess, in number of cases of sickness, has been found, at the least, 28 for every death. The cost of each case, from loss of labour, to the person sick, or, in case of a child, to the adult attendant, and from cost of medicine and other incidental expenses, is taken at an average of 1*l.* per case, and the average expense of funerals at 5*l.* each.

The money value of adult labour, (estimated also in the modes used by E. Chadwick, Esq., C.B., in the Sanitary Report,) either to the community or to the persons dependent upon the adult for support, is taken at 10*s.* per week for each individual dying. All the adults dying, lose the number of years as before stated, therefore on the total number of deaths, and the loss in excess on the year's deaths will be—

|                    | £.   | s. | d. |
|--------------------|------|----|----|
| Sickness . . . . . | 298  | 0  | 0  |
| Funerals . . . . . | 53   | 0  | 0  |
| Labour . . . . .   | 191  | 0  | 0  |
| Total . . . . .    | £542 | 0  | 0  |

A sum, it is believed, that will be found considerably under the actual amount.

NUMBER and CAUSES of DEATH during a period of Two Years, ending September 30, 1849, furnished by Mr. BISSILL, the Registrar.

| CAUSES OF DEATH.                 | AGE.          |                |                       | Total. | CAUSES OF DEATH.                    | AGE.          |                |                       | Total. |
|----------------------------------|---------------|----------------|-----------------------|--------|-------------------------------------|---------------|----------------|-----------------------|--------|
|                                  | 0<br>to<br>15 | 15<br>to<br>60 | 60<br>& up-<br>wards. |        |                                     | 0<br>to<br>15 | 15<br>to<br>60 | 60<br>& up-<br>wards. |        |
| CAUSES . . . . .                 | 56            | 30             | 51                    | 137    | Measles . . . . .                   | 8             | ..             | ..                    | 8      |
| DIFFERENT CAUSES . . . . .       | 49            | 29             | 50                    | 128    | Whooping Cough . . . . .            | 1             | ..             | ..                    | 1      |
| I.—Zymotic Diseases . . . . .    | 22            | 6              | 7                     | 35     | Croup . . . . .                     | 3             | ..             | ..                    | 3      |
| SPORADIC DISEASES—               |               |                |                       |        | Diarrhoea . . . . .                 | 8             | 3              | 5                     | 16     |
| I.—Dropsy, Cancer, and           |               |                |                       |        | Typhus . . . . .                    | 1             | 1              | 2                     | 4      |
| other Diseases of un-            |               |                |                       |        | Metria or Puerperal Fever . . . . . | ..            | 1              | ..                    | 1      |
| certain or variable              |               |                |                       |        | Erysipelas . . . . .                | 1             | 1              | ..                    | 2      |
| Seat . . . . .                   | ..            | ..             | 1                     | 1      | Mortification . . . . .             | ..            | ..             | 1                     | 1      |
| I.—Tubercular Diseases . . . . . | 13            | 11             | 1                     | 25     | Scrofula . . . . .                  | ..            | 1              | ..                    | 1      |
| —Diseases of the Brain,          |               |                |                       |        | Tabes Mesenterica . . . . .         | 9             | ..             | ..                    | 9      |
| Spinal Marrow,                   | 2             | 1              | 4                     | 7      | Phthisis (or Consumption) . . . . . | 2             | 10             | 1                     | 13     |
| Nerves, and Senses               |               |                |                       |        | Hydrocephalus . . . . .             | 2             | ..             | ..                    | 2      |
| —Diseases of the Heart           | 1             | ..             | 5                     | 6      | Cephalitis . . . . .                | 1             | ..             | ..                    | 1      |
| and Blood-vessels . . . . .      |               |                |                       |        | Apoplexy . . . . .                  | ..            | 1              | ..                    | 1      |
| I.—Diseases of the Lungs,        |               |                |                       |        | Paralysis . . . . .                 | ..            | ..             | 4                     | 4      |
| and of the other                 |               |                |                       |        | Convulsions . . . . .               | 1             | ..             | ..                    | 1      |
| Organs of Respiration . . . . .  | 1             | 4              | 13                    | 18     | Pericarditis . . . . .              | 1             | ..             | 5                     | 6      |
| —Diseases of the Stomach,        |               |                |                       |        | Bronchitis . . . . .                | ..            | 2              | 7                     | 9      |
| Liver, and other Organs of       |               |                |                       |        | Pneumonia . . . . .                 | 1             | 2              | 1                     | 4      |
| Digestion . . . . .              | 1             | ..             | 4                     | 5      | Asthma . . . . .                    | ..            | ..             | 4                     | 4      |
| I.—Childbirth, Diseases          |               |                |                       |        | Disease of Lungs, &c. . . . .       | ..            | ..             | 1                     | 1      |
| of the Uterus, &c. . . . .       | ..            | 1              | ..                    | 1      | Gastritis . . . . .                 | ..            | ..             | 1                     | 1      |
| I.—Rheumatism, Diseases          |               |                |                       |        | Enteritis . . . . .                 | ..            | ..             | 1                     | 1      |
| of the Bones, Joints,            | ..            | 1              | 1                     | 3      | Jaundice . . . . .                  | 1             | ..             | ..                    | 1      |
| &c. . . . .                      |               |                |                       |        | Ovarian Dropsy . . . . .            | ..            | 1              | ..                    | 1      |
| I.—Premature Birth and           |               |                |                       |        | Disease of Joints, &c. . . . .      | ..            | 1              | 1                     | 2      |
| Debility . . . . .               | 6             | ..             | ..                    | 6      | Intemperance . . . . .              | ..            | 1              | ..                    | 1      |
| I.—Age . . . . .                 | ..            | ..             | ..                    | 12     | Burns and Scalds . . . . .          | 1             | 1              | ..                    | 2      |
| Sudden . . . . .                 | 1             | 2              | ..                    | 3      | Drowning . . . . .                  | 1             | ..             | ..                    | 1      |
| I.—Violence, Privation,          |               |                |                       |        | Fractures and Contusions . . . . .  | ..            | ..             | 2                     | 2      |
| Cold, and Intemperance . . . . . | 9             | 6              | 1                     | 16     | Other Violence . . . . .            | ..            | 1              | ..                    | 1      |
|                                  |               |                |                       |        | Causes not Specified . . . . .      | 7             | 1              | 1                     | 9      |
|                                  |               |                |                       |        | Sudden . . . . .                    | 1             | 2              | ..                    | 3      |
|                                  |               |                |                       |        | Debility . . . . .                  | 6             | ..             | ..                    | 6      |

Mr. Bissill, surgeon and medical officer, stated:—

“The diseases most prevalent amongst the working classes are common colds, typhus fever (virulent type), and bronchitis, whilst those who are employed in the fens are subject to rheumatism; several cases having proved fatal about three years since. The effluvium from the gullyholes in the town is so particularly offensive and injurious to health, that it is high time something was done to improve the drainage.”

Mr. Coulson, a medical practitioner, and resident for the last six years, stated:—

“Typhus fever prevails generally in the summer months, commencing with simple fever and running into typhus, but it is mainly confined to the houses in yards and courts, built up at the end, where filth abounds, and the free circulation of the air impeded.”

J. H. Boot, Esq., M.D., stated:—

“I have been resident in the town for about 17 years. The principal epidemic is continued fever leading into typhus and scarlet fevers.”

PLAN  
OF THE  
PRINCIPAL STREETS  
AND EXISTING SEWERS IN  
SLEAFORD.

SCALE

0 20 40 60 Feet



*Burnt-yard*, a passage, containing seven houses, occupied by 28 persons; privy opposite front door; a drain is connected with the soil-pit and extends into adjoining property.

*William's-yard* contains six houses (no outlets at back), in the occupation of 28 persons; soil from two privies and pigsties, flows into an open pit within four yards of the dwellings; this yard is reached by a narrow entry.

*Paine's-yard*, contains six houses, five occupied by 26 persons; foul water lies upon the surface; soil-pit to privy opposite the bake-house door, and pigsties near.

**COMMON LODGING-HOUSES.**—The lodging-houses for accommodation of tramps are of the lowest class, dirty, and otherwise in a deplorable condition. They are five in number, two of them also used as beer-houses. In one of these haunts, 25 beds are made up in small rooms and a *loft* over, and in a second 10 beds, including five placed in a *loft*; the sitting-rooms during the first part of the night being literally crammed. The scenes I myself witnessed on entering these dens during the night, I refrain from stating, seeing that the local Board have ample powers, under the provisions of the Public Health Act, to prevent a recurrence of much that is now carried on in these places. The usual charge per night is 3*d.* per person.;

**SEWERAGE.**—One of the evils arising from the congregation of masses of beings into confined spaces is the production of large quantities of animal and vegetable refuse, fluid and solid; the town of New Sleaford is not an exception to the rule, viz., that the accumulation of such refuse, in the proximity of human dwellings, acts either as an exciting, or as a predisposing cause of disease.

*Mr. Moore* observed—

“In 1830 a scheme of sewerage for the town was planned and carried with the assistance and co-operation of the Marquis of Bristol, through Mr. Peter Rogers, his Lordship's then resident steward. It will however be seen from the evidence of the medical men and others, that the sewers thus constructed have ceased to secure to the inhabitants permanently the benefits for which, doubtless, they were designed.”

The annexed plan marked No. 2, and prepared by Mr. Parry, the county surveyor, shows the position of the drains and sewers and their several outlets.

The sewer in North-gate, is, according to the evidence of Mr. Parry, 285 yards in length, with a fall of 27 feet 9 inches, or about 1 in 30, and of the following dimensions, viz., 33 yards of 9-inch tile drain, 100 yards of 18-inch cylindrical stone ditto, 132 yards of 2 feet 9-inch ditto. The lower end communicates with a cesspool 30 feet in length, 6 feet wide, and 8 feet 6 inches deep,

marked A on the plan 2, at the junction of South and East Gate-streets with that of North-gate.

From the cesspool A (on plan) the sewer is carried down East-gate to a cesspool at B, (6 feet long, 5 feet wide, and 8 feet deep,) and of the following dimensions, viz., 95 yards lineal of cylindrical sewer, constructed with *rubble*, 2 feet 9 inches in diameter, having a fall of only 5 inches, or 1 in 684.

From the cesspool B, to a similar one at C, in the same street, 11 feet long, 10 feet wide, and 8 feet deep, a distance of 146 yards, the sewer is 3 feet in diameter, constructed with rubble masonry, having a fall of 10 inches, or about 1 in 526.

From the cesspool C, in a southerly direction, a sewer 82 yards in length, extending behind the *Lock-up*, 36 inches in diameter, and laid to a level, debouches into an open drain about 440 yards in length, with a fall of 2 feet 8 inches, or 1 in 495. The lower end of this drain, which is an extension of the 36-inch sewer, *communicates with a 7-inch* square wood trunk, laid down, as a part of the system, under the navigation or canal; hence the greater is made to discharge its contents through the lesser, the areas being respectively 1,017, 876, and 49; or in the ratio of 20 to 1, that is, the upper portion of the sewer is 20 times that of its final outlet.

The sewer in West-gate, 383 yards in length, and 19 feet fall, or about 1 in 60, receives the drainage from Leicester-street, and enters the North Gate-street sewer, nearly at right angles, at about 10 yards distance from the cesspool A. The upper end of the West-gate sewer, 55 yards in length, is laid with 9-inch tiles; 98 yards of 18-inch cylindrical; 230 yards of 36-inch ditto, formed with rubble-stone.

In South-gate, north side of the river, the sewer, 64 feet in length, 36 inches in diameter, receiving the drainage from Water-lane, enters the large cesspool at A. There is no fall to this sewer; but provision is made for admitting water from the river by means of a penstock or sluice for flushing this portion of the sewerage.

That part of South-gate lying between the two bridges is sewered by means of tile-drains; the remainder, 198 yards in length, and Jermyn-street, contains an 18 and 36 cylindrical sewer, with a fall of 8 inches, or 1 in 891, extending to a cesspool at D, 30 feet long, 8 feet deep, and 6 feet wide, situate in the parish of Old Sleaford. But the final outfall for this portion of the sewage, as well as for other parts of Old Sleaford, is into the old river.

In addition to the sewers already described, drains and sewers have been laid down in the Market-place, Thornhill's-lane, Back-lane, and Carr-street, the latter, together with the sewers from the Market-place, communicating with the main sewer near the cesspool B in East-gate; whilst part of those from Back-lane dis-

charge their contents into an open ditch; from thence into a tile-drain, extending through open ground, and terminating with its outfall at *Probe-gares*, where an open drain, commencing at the swing bridge, and extending along the south side of the Sleaford navigation, from which it is separated by one of the public walks of the town, also discharges its soil, combined with the sewerage from Roberts's Brewery; the necessity of cleansing the utensils in brewing, involves a current of warm water, this, carrying with it mucilage and other vegetable elements into the drains, excites to decomposition other animal and vegetable matters it meets with, and inevitably tends to the production of most offensive smells. The remedy in the present instance is to be sought and obtained by laying down a tubular pipe-covered drain, and thus secure to the inhabitants a guarantee against noxious smells whilst availing themselves of this one of their public walks.

*Mr. Parry* stated:—

“ I have held the appointment of county surveyor for about two years; but I have no jurisdiction over the sewers or drainage. The number of gullyholes in the several streets amount to 117, in addition to the large cesspools; from the latter several cart-loads of soil are periodically removed. In no instance are the gullyholes trapped; and the streets are repeatedly being broken up, in order to remove the deposit.”

*Mr. Moore* observed:—

“ The sewers have been laid a considerable depth below the surface of the streets, with proper cesspools, &c., and admit of being flushed from the river; but, owing to long-continued neglect, they are becoming choked and offensive, and the main object of the requisitionists is to have a permanent Board constituted, responsible for the care and management of these sewers.”

*Dr. Boot* stated:—

“ The condition of the sewers is become very unsatisfactory.”

*Mr. Bissill*, surgeon, stated:—

“ It is high time something was done to improve the state of the drainage; the effluvium escaping from the different gullyholes is particularly offensive.”

*Mr. Coulson*, surgeon, stated:—

“ The drainage generally is impeded, and in the main streets it is imperfect, and the smells offensive and injurious to health.”

The sewers were laid down in 1830. The population at that time amounted to about 2,400, it is now estimated, approximately, at 3,500; but there is no reason for supposing this increase can have had the effect of rendering the sewers offensive from noxious exhalations, although it may, and no doubt has, tended to increase the quantity of animal and vegetable refuse, which is in itself a serious evil.

The sewers, which have been so extensively laid down for carrying off the surplus waters from the seat of the town, if designed simply for that purpose, and there is good reason to believe such was the case, then I think the admission of foul water, refuse, &c., from dwelling-houses, may have the effect of causing the impure exhalations so loudly complained of by the inhabitants, and not without good reason.

The conclusion is irresistible, that notwithstanding a large expenditure has been incurred for sewers, it was never intended they should be employed otherwise than for carrying off surplus waters.

**GENERAL DRAINAGE.**—In addition to the main sewers constructed in 1830, the Commissioners under the Act 32 Geo. III., 1792, entitled “An Act for making and maintaining a Navigation from Sleaford Castle causeway, through the Town of *Sleaford-mill*, along the course of *Sleaford-mill* stream,” have secured to themselves a jurisdiction over the back drains, or of the property adjoining thereon, for the purposes of navigation upon payment of compensation, “with power to enforce penalties if any person or persons shall throw ballast, gravel, stones, ashes, earth, dirt, or rubbish into any part of the navigation, trenches, watercourses, or basins made by virtue of the said Act;” but it is silent as to sewerage and foul water, although it is specially provided that neither the navigation, or the works of any kind made by virtue of the Act, shall be subject to the control, direction, survey, or order of the Commissioners of Sewers, any law or statute to the contrary notwithstanding.

Her Majesty’s Commissioners of Sewers for the city of Lincoln and county of the same city, for the county of Lincoln, and part of the county of Nottingham, acting under a Commission, dated 25th November, 1840 (I understand), claim jurisdiction over a portion of the stream through the town; but to what extent, or in what manner exercised, I have not had the means of judging, no person appearing at the Inquiry on behalf of the Commissioners.

**SCAVENGING.**—In so far as the object of scavenging relates to the removal of refuse from the proximity of human habitations, it is closely allied to sewerage, the latter constituting the best means, structural and monetary, for the locomotion of all foul waters and floatable bodies; and the former for the removing of solids, such as ashes, decaying vegetable matter, &c.

The market is private property, and situate in the centre of the town; it has been carefully paved, and is cleansed by the lessee of the tolls. But for other parts of the town the scavenging devolves upon the local authorities; and the chief evils connected with the present system consist in the absence of any jurisdiction

over the courts, alleys, passages, and undedicated streets, none of which come within the province of the local authorities or surveyors of highways; whilst the control of the latter over dedicated ways, under the General Highway Act, will, I think, be found exceedingly limited, it having been decided at common law that a parish surveyor is not bound to *clean* the highway, but only to repair it; and there does not appear to be anything in the Surveyors Act, 5 and 6 Wm. IV., c. 50, to alter the common law in that respect.

It does not seem that the surveyor has anything to do with the class of nuisances that are objectionable, merely on the ground of *uncleanliness* or *insalubrity*: he can only deal with them when they injure the highway, or impede and obstruct the safe and commodious passage upon it.

To some extent the Nuisances Removal and Diseases' Prevention Act, 12 and 13 Vict., cap. 111, meets the difficulty, but it does not prevent *a recurrence of the evils*; and it is not at all probable that householders or others will be found to be periodically acting as informers against their fellow-townsmen who may be creating nuisances arising from the numerous accumulations of foul and offensive matter, animal and vegetable, more or less injurious to health.

The evidence of Mr. Coulson and other medical men shows that typhus fever prevails in the confined courts and yards. In many of these places pigs are kept, and a market in one of the yards for the sale of these animals; heaps of manure in various places, open ditches, forming receptacles for human excrements, foul water lying upon the surface, and deposits of decaying animal and vegetable matter, forming a powerful predisposing cause to the attacks of disease.

The practice of weakening by decomposition in the thick of the population should be discontinued, and the present waste, amounting to two-thirds of the most valuable products in the shape of noxious gases, no longer permitted to impair the health of the inhabitants; but which, I think it will be found, can only be done effectually by extending the provisions of the Public Health Act, 1848, to this district, or a similar measure.

NECESSARIES.—*Mr. Parry* stated:—

“That only about 30 houses were supplied with water-closets; the remainder were furnished with common privies, and these generally in communication with cesspools and water-courses.”

Many of these privies are improperly placed near doors and windows of houses. Relative thereto it was stated by some of the parties that they were obliged to keep their windows shut in self-defence.

But the local authorities have no jurisdiction over the number,

position, or periods for a systematic emptying these privies, unless the householder, making the best agreement he can with the farmers to take away the soil, be entitled to such a name, viz. :—

*Mr. Tomlinson* stated—

“The *dilly* is supplied by the farmers for removal of night-soil, and in addition to *haling* it about six miles, which is the general distance, they pay from 5s. to 10s. per load (of 2 to 3 cubic yards) for the soil itself.”

The inhabitants in the meantime are sufferers by inhaling the noxious vapours circulating through their dwellings. But, hitherto, there has been no help for this state of things, there being no power to apply the economy of removing these, with other impurities, by means of water.

**WATER SUPPLY.**—Supplies of water are at present procured from two sources, viz., common wells and the river. It is abstracted from the former by means of common pumps, and from the latter by *dipping* at different parts of the river; in some instances the distance travelled for each supply of water being about 400 yards, or one-fourth of a mile.

“The interposition of the labour of going out and bringing home water from a distance acts as an obstacle to the formation of better habits; and I deem it an important principle to be borne in mind, that to improve the actual condition of the lower classes, conveniences of this description must precede and form the habits; it is in vain to expect of the great majority of them that the disposition, still less the habits, will precede or anticipate and create the conveniences.

“It is a serious inconvenience, as well as a discomfort, to have to fetch water at a distance out of doors from the pump or the river on every occasion that it may be wanted, whether it may be in cold, in rain, or in snow. The minor comforts of cleanliness are of course foregone to avoid the immediate and greater discomforts of having to fetch the water.”—*Report of Edwin Chadwick, Esq., C.B., on the Sanitary Condition of the Labouring Population.*

*Mr. Bedford*, medical officer to the Union, stated :—

“He considered the water of excellent quality, both for beverage and domestic purposes; he did not understand the properties of the water chemically. The water is always clear, except in rain or wet weather. The poor generally abstract their supplies from the river (fetching it in cans or pails), and has never known any ill effects to arise from its use.”

*Mr. Coulson*, surgeon, stated :—

“The poorer class are obliged to get their water from the river, and the dipping places in some instances are in close proximity to the outfalls of private drains and sewers. The water is very hard and charged with sulphate of lime. Parties do not allow it to be given to horses.”

*J. H. Boot, Esq., M.D.*, stated :—

"I have given considerable attention to the qualitative properties of water; the water in the channels, from which a number of the labouring class fetch their supplies, is impregnated with noxious organic matter; much of the sickness is in part attributable to this circumstance."

**PUBLIC ROADS.**—Two parishioners are elected annually to fill the office of highway surveyors.

*Messrs. Jackson and Turner*, at present in office, stated:—

"The length of roads under their management is about 2,208 yards; they use the oolite limestone for the repairs, paying for—

|                    | s. | d. |
|--------------------|----|----|
| Getting . . . . .  | 0  | 8  |
| Leading . . . . .  | 0  | 7  |
| Breaking . . . . . | 0  | 8  |

Total per  $1\frac{1}{2}$  cubic yard . . . 1 11

and for gravel delivered to wharf 6s. per ton, including dues and haling; that the highway rate for the last year was 10d. in the pound, realizing 266l. 7s. 8d."

From the above statement it seems that the repair of the highways amounts to about 212l. per mile per annum.

*Mr. Peake* has observed:—

"The occupiers of 377 houses are excused from payment of highway rates."

The total length of causeway paved with Yorkshire stone is stated by *Mr. Parry* "at 3,160 yards; and of turnpike road, 3,465 yards in New Sleaford; 1,540 yards in Holdingham."

LIST of Benefit Societies in New Sleaford, obtained from Medical Officers.

| NAME OF SOCIETY.                                            | Number of Members. | Annual Contributions. |    |    |
|-------------------------------------------------------------|--------------------|-----------------------|----|----|
|                                                             |                    | £.                    | s. | d. |
| The Sleaford Friendly Society . . . . .                     | 134                | 0                     | 3  | 0  |
| No. 1007, Court Handley, of Ancient Order of Foresters .    | 57                 | 0                     | 3  | 6  |
| Pride of Lincolnshire, of the Albion Order of Odd Fellows . | 37                 | 0                     | 3  | 0  |
| Feeling Heart Lodge of Odd Fellows . . . . .                | 150                | 1                     | 2  | 9  |
| The Victoria Lodge of Odd Fellows . . . . .                 | 60                 | 1                     | 2  | 9  |
| The Old Sick Club . . . . .                                 | 50                 | 1                     | 1  | 0  |
| The Handley Lodge of Odd Fellows . . . . .                  | 78                 | 0                     | 3  | 0  |
| The Old White Hart Club . . . . .                           | 73                 | 0                     | 3  | 0  |
| The Waterloo Lodge of Odd Fellows . . . . .                 | 165                | 0                     | 3  | 0  |

NOTE.—Many of the members of the above Societies are not inhabitants of Sleaford.

October, 1849.

**BURIAL-GROUND.**—*Mr. Moore*, churchwarden, stated:—

"The parochial burial-ground has been obtained by immemorial occupation, excepting an enlargement of 21 perches, acquired at the inclosure in 1794.

"The area of the churchyard is about 3 roods 37 perches, minus 551 square yards, occupied by the church and boundary walls.

"The west side is on a level with and open to the market-place. The south side abuts upon the turnpike road, but 2 feet above the said road, with dwellings on the opposite side of the latter. The north side abuts on the vicarage-house in part, and is about 2 feet above the floor; the remainder of the north side is bounded by an open field, whilst the east side of burial-ground extends to within 4 feet of the houses, and rather above the level of the floors.

"The total number of burials in the seven years ending 1848 was 532, viz. :—

|      |   |   |   | Adults.    | Children. |
|------|---|---|---|------------|-----------|
| 1842 | . | . | . | 61 viz. 33 | 28        |
| 1843 | . | . | . | 63 „ 34    | 29        |
| 1844 | . | . | . | 95 „ 48    | 47        |
| 1845 | . | . | . | 82 „ 49    | 33        |
| 1846 | . | . | . | 98 „ 46    | 52        |
| 1847 | . | . | . | 66 „ 27    | 39        |
| 1848 | . | . | . | 67 „ 34    | 33        |

"The gentry, professional persons and tradesmen, and shopkeepers, constitute from 10 to 5 per cent. of the above number.

"The clerk receives the orders; and friends of deceased, with the sexton, select the site.

"Funerals take place on any day in the week; the usual hour is 4 o'clock, p. m."

The *Rev. R. Yerburgh, D.D.*, vicar, observed :—

"I have for many years considered the churchyard too much crowded, say, *for the last 20 years*, when the population has increased about 100 a-year.

|                                            |     |
|--------------------------------------------|-----|
| The total number of head stones amounts to | 225 |
| Flag stones over brick vaults . . . . .    | 21  |
| Tombs . . . . .                            | 18  |

The residue of the graves are without head stones, and are merely *mounded up*.

"No fees are paid to the churchwardens, but the vicar, clerk, and sexton, receive fees, and of the following amounts, viz. :—

*Vicar.*

|                                        | £. | s. | d. |
|----------------------------------------|----|----|----|
| Burial fee . . . . .                   | 0  | 2  | 6  |
| If non-resident . . . . .              | 0  | 5  | 0  |
| Mortuary having more than 20 <i>l.</i> | 0  | 10 | 0  |
| Single vault . . . . .                 | 1  | 1  | 0  |
| Headstone . . . . .                    | 0  | 7  | 0  |
| Tombstone . . . . .                    | 3  | 3  | 0  |
| Vault in church . . . . .              | 5  | 5  | 0  |
| Tablet in church . . . . .             | 3  | 3  | 0  |

*Clerk.*

|                                  |   |   |   |
|----------------------------------|---|---|---|
| Whether child or adult . . . . . | 0 | 2 | 0 |
| If non-resident . . . . .        | 0 | 4 | 0 |

*Sexton.*

|                                          | £. | s. | d. |
|------------------------------------------|----|----|----|
| Child or adult . . . . .                 | 0  | 1  | 6  |
| Non-resident . . . . .                   | 0  | 3  | 0  |
| Sodding the grave, if required . . . . . | 0  | 0  | 6  |

*Richard Atkinson* stated:—

“ He was assistant-sexton for eight years and a half, and has been sexton one year. Before the sewers were laid down in the main street and market-place, the water stood up to within 4 feet of the surface of the burial-ground. Has repeatedly in getting down a grave been obliged to remove the remains of former interments, and also to cut away portions of coffins. In some instances he has buried two in a 5-feet grave. It has not been usual to adhere to any fixed rules, or even make regulations as to re-opening the ground.”

*Mr. Moore* observed:—

“ The churchyard, if thought desirable, could be enlarged on the north side from the adjoining field,” but he adds, “ the site is not eligible.

“ The parish own some tenements in South-gate, in lease to Widow Fieldsend and others, which, if they could be sold, would aid the purchase of land for a cemetery.”

**LIGHTING.**—The town is lighted with gas by lessees of the works (having about one year of the lease to run), consisting of a bed of seven retorts, with purifier, and one gasometer; capacity 13,000 cubic feet, but from some defect it will only hold 11,000.

|                                                                                           | Feet.           |
|-------------------------------------------------------------------------------------------|-----------------|
| From 1st of September to 1st of March the quantity of gas registered by station meter was | 1,356,800       |
| Ditto, from 1st of March to 1st of September                                              | 572,700         |
|                                                                                           | <hr/> 1,929,500 |

|                                                                    | Feet.           |
|--------------------------------------------------------------------|-----------------|
| Consumption from 1st of September to 1st of March . . . . .        | 618,500         |
| Public lamps . . . . .                                             | 255,900         |
| From 1st of March to 1st of September, private consumers . . . . . | 258,600         |
| Public lamps . . . . .                                             | 62,900          |
|                                                                    | <hr/> 1,195,900 |
| Loss . . . . .                                                     | <hr/> 733,600   |

Hence it appears that the loss amounts to more than one-half of the quantity consumed.

There are 51 public lights, and charged at 38s. 6d. per light per 1,000 hours, or about 7s. 9d. per 1,000. These lights are about 45 yards apart, and are lit from 1st of September to the 1st day of April. The charge to private consumers is 10s. per 1,000.

## REMEDIES.

**FUTURE WATER SUPPLY.**—A primary condition of the Public Health Act is, that the supply of water should be pure and wholesome, free from animal, vegetable, or mineral matter, delivered fresh, and in sufficient quantity, for all the purposes comprehended in the said Act.

The quantity of water required for the complete supply of every tenement for domestic purposes alone, is estimated at 4 cubic feet per day for each person, allowing for street watering, &c. Hence the estimated quantity for these purposes alone amounts to 12,736 cubic feet per day.

Having examined the district, assisted by Mr. Parry, I have arrived at the conclusion, that the conditions required by the Public Health Act may, both in a qualitative and a quantitative sense, be complied with, by adopting the spring near Mr. Parry's stone-quarry as the source, which is about one mile and a-half distant from the town.

The site where the waters rise, as well as the ground intervening between the town and the source, is well adapted for the establishment of reservoirs, filtering beds, and laying of the mains, with appendages.

The difference of level has not been ascertained. I am, however, inclined to the opinion, that it will be quite practicable to supply a considerable portion of the town by natural pressure, and that for the more elevated portions of the town, water or engine power may be made available. The final decision on this point must however be deferred until the surveys and levels are made.

The mode of supply is twofold,—

1. Intermittent or occasional.
2. Natural or constant.

The objections to the first (intermittent system), as regards their bearing on the domestic economy of every house, are numerous, and experience shows they are sufficiently powerful to preclude its adoption. That there ought to be no limit put to the supply of water carried into every house for domestic purposes is a statement in which every well-wisher for the improvement of the condition of the working classes must, I think, concur. Now, this necessary of life can be secured to every tenement at a cost that will preclude parties advancing the objection, "That great expense must be incurred." Instead of having to provide cisterns and communication-pipes, with ball-cocks, &c. at a cost of 3*l.* or more to each of the smaller-class tenements, the total expense by the natural or constant system, aided by judicious improvements already made, has, upon an average, not exceeded 6*s.* to 9*s.* per house.

**EXPENSE OF FILTRATION.**—In the event of its being found, upon further inquiry, that filtration will be necessary, the cost of the process for a supply of 40 gallons per day to a labourer's cottage, according to the expense (where works have already been established), will not exceed  $4\frac{1}{2}d.$  per annum, a sum they are willing to pay.

**STREET SEWERS AND HOUSE DRAINS.**—A primary condition of the Public Health Act, 1848, is, that the most careful means be adopted for an entire removal of all refuse, solid as well as fluid, beyond the sphere in which their noxious influence can be exerted. Hence any system of drainage or sewerage that falls short in promoting this object, which is much desired in the town under consideration, cannot but be inefficient.

Seeing that sewers have been designed and constructed in all the principal streets, as well as in the major part of secondary places, the question may appositely be asked, How is it that the inhabitants are still subjected to the evils so loudly complained of by the medical practitioners and others, at the time of my holding the inquiry? The answer is obvious. The sewers having been laid down, simply for carrying off the surplus and surface-waters, to the exclusion of refuse, &c., from dwelling-houses, the source and evil remain entirely untouched; and even with the best intentions on the part of the promoters of the existing sewers, so long as there was an absence of legislative powers to require private improvements by way of house-drainage, and abolishing all soil-pits and cesspools, the design could but have proved abortive; and the partial use made of the sewers under present circumstances tends, as the evidence shows, to increase rather than abate the evil, notwithstanding means have been provided for flushing them.

It is now a recognized principle of agriculture, founded upon the practical application of chemical experience, that the refuse of a town forms one of the best fertilizers within reach of the agriculturist; and its pecuniary value ought not, therefore, to be left out of the consideration any longer, when treating of sewerage.

Mr. Oliver of Lochend—

“A very able agriculturist, and who held some portions of the irrigated meadows at Edinburgh, in showing the comparative loss of produce in the undrained meadows, complained that the sewer-water was far too highly charged with manure for the best application, and that the best herbage was obtained after the sewer-water had deposited its fibrous matter, and was transparent. The chief obstacle experienced was the want of water and the want of means of dilution.

“The facts elicited by subsequent investigation appeared to establish the important conclusion, that an extent of dilution, such as to extinguish offensive smells, is the most favourable condition for absorption by the plant.”—*Report of Edwin Chadwick, Esq. C.B.*

The material best adapted for the purpose of additional main sewers is beyond all doubt that of stone-ware, and the form cylindrical; but in no instance will pipes exceeding 15 inches in diameter be required; in most cases a less diameter will suffice to insure efficiency in action, and security against obstructions from deposits.

**HOUSE DRAINAGE.**—Private drains, connecting houses with the main sewers, are twofold, and distinguished by the terms “back” and “front” drainage. The advantage and economy obtained by the former over the latter, *Mr. Austin* has shown and described—

“As being nearly, in the gain of fall, as three to one, and the time of discharging decomposing and putrid refuse from beneath the premises, as one to eight, compared with the front drainage.”

The cost for each house having a sub-main, 4 and 6 inches diameter, including a sink, syphon traps, and pipes, with a rain-water drop-pipe, head and syphon trap (to every two houses), communicating with the sewer for discharge of surface waters, will not exceed 2*l.* 5*s.* per house; a sum, if taken by way of an improvement rate, a little less than three-farthings per house per week.

In all cases, except where the houses are only one room deep, and without any outlets or space behind, back drainage may be adopted; but where houses have been so injudiciously built as not to admit of the latter system of drainage, there is no alternative, and front drainage must be adopted.

The ordinary cost for constructing a new privy, fitted with soil-pan of glazed pottery-ware, syphon trap, &c., complete, is estimated at 50*s.* to 60*s.*, if constructed in numbers and under one general system; this sum, if raised by way of an improvement rate, say for a period of 20 years, the rental would not exceed 4*s.* per annum for repayment of principal and interest at 5 per cent. But in cases where proper privies exist, the expense for converting them into water-closets will not exceed 10*s.* to 12*s.* each.

The poorest person would thus have means of adopting habits of decency and cleanliness.

**PRIVY ACCOMMODATION.**—*Mr. Thomas Cubitt*, the eminent builder, in his evidence before the Health of Towns Commission, stated:—

“I think that every house ought to have a privy; that every family should have one; and believe, as the public habits improve, and people get more cleanly, they will feel a desire for them; and I scarcely build any house, however small, without having a water-closet attached to it, and not a common privy.”

Hitherto, for want of water (the only proper agent for re-

moving the soil and other impurities economically), the inhabitants have not been able to avail themselves of the facility that water-closets afford for improving habits of cleanliness.

The cheaper kind of water-closets formerly cost about 10*l.* more than a common privy.

**REMOVAL OF SOLID REFUSE AND ASHES.**—In the domestic economy of every class of dwelling-places there results collections of ashes and other solid refuse which it is impracticable to carry off by means of the sewers; consequently provision will have to be made not only for temporary deposits of dust, ashes, and rubbish, pursuant to the terms of the Public Health Act. This may be best done by the adoption of portable boxes of a small but uniform size and figure, whereby the workmen will be able to effect the removal at the least possible cost. It is believed that the refuse itself will more than compensate for the removal.

**PAVING OF COURTS AND YARDS.**—In various undedicated passages, courts, &c., surrounded with tenements in part or entirely, there are no proper pavements, and, as a consequence, the slops, &c., thrown upon the surface of the ground in front of the houses, not only impregnate the soil, but keep it damp and dirty; the exhalations, as a matter of course, become proportionately offensive and noxious.

The effect of dry pavement on the health of children has often been strongly marked. It forms a relief to overcrowded rooms, by enabling the children to play more in the open air, and, at the same time, rendering that of the rooms purer. Economy forms in this, as in every other instance of works, an important element; and in furtherance thereof, and to satisfy the sanitary condition, it has been suggested that these pavements might be laid with gas ar, boiled and mixed with gravel, forming a kind of asphalte.

It is estimated that this pavement may be laid down at 1*s.* per square yard. This will lead to a reduction of charges of families resident in the unpaved places, as well as secure to them additional comforts, and a benefit to the inhabitants generally.

**CEMETERY.**—The accounts given by the vicar and churchwarden, in addition to the evidence of the sexton, emphatically exhibit the urgent necessity that exists for additional space being provided for sepulture. And from the best consideration I have been enabled to give to this part of the inquiry, I am of opinion that it would be unwise to attempt the provision by enlarging the present churchyard, not merely on account of its close proximity to dwellings, but also from not being the most eligible site in a sanitary view, there being ground sufficiently far from the town as not to endanger the health of the inhabitants from the deleterious gas and morbid matter which are inevitably effused where bodies are wasted and have disappeared, but, on

the other hand, at a convenient distance for parties attending or officiating.

Confining my attention to the structural part of the question merely, and apart from the legislative, taking the average of deaths at 80 per annum, and allowing 20 years to expire before any part of the ground is re-opened, the area necessary to be set apart for a cemetery-ground, at 32 feet for each grave, including walks, &c., will amount to 5,700 yards.

The estimated cost for sub and surface draining, enclosure with roads round, entrance, chapel, and all necessary erections, including gravel walks and planting, amounts to 600*l*.

It is not, however, expected that the rate-payers will be subjected to any additional rate for establishing a cemetery-ground, as it is believed, by proper regulations, a reduction in funeral charges, which is at present under consideration, will more than suffice to meet the interest on the capital expended, and at the same time secure that degree of repose and solemn impression, which ought to prevail in all places of sepulture.

**PROXIMATE ESTIMATES.**—In the absence of the necessary engineering drawings, founded upon accurately-made surveys, the following estimates must only be taken as based upon the known results of established works and detailed estimates, in other places where surveys, &c. have been made, the accuracy whereof I see no cause to question; these statistics may, I think, be considered the maximum.

| <i>Water- Works.</i>                                                 |   |   |   |   |   |   |   |   |   | £. | s. | d. |
|----------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|
| Reservoir—                                                           |   |   |   |   |   |   |   |   |   |    |    |    |
| Land                                                                 | . | . | . | . | . | . | . | . | . | .  | .  | .  |
| Embankment, puddle, and shingling                                    | . | . | . | . | . | . | . | . | . | .  | .  | .  |
| Roads and fencing with waste weir, waste pipe, valve, and appendages | . | . | . | . | . | . | . | . | . | .  | .  | .  |
| Filter beds and tank—                                                |   |   |   |   |   |   |   |   |   |    |    |    |
| Land                                                                 | . | . | . | . | . | . | . | . | . | .  | .  | .  |
| Embankment                                                           | . | . | . | . | . | . | . | . | . | .  | .  | .  |
| Filter tunnels                                                       | . | . | . | . | . | . | . | . | . | .  | .  | .  |
| Natural face                                                         | . | . | . | . | . | . | . | . | . | .  | .  | .  |
| Paving or common pitching                                            | . | . | . | . | . | . | . | . | . | .  | .  | .  |
| Paving to tank                                                       | . | . | . | . | . | . | . | . | . | .  | .  | .  |
| Gravel, sand                                                         | . | . | . | . | . | . | . | . | . | .  | .  | .  |
| Communication pipes and valves                                       | . | . | . | . | . | . | . | . | . | .  | .  | .  |
| Fencing                                                              | . | . | . | . | . | . | . | . | . | .  | .  | .  |
| Mains, appendages, and distributing pipes—                           |   |   |   |   |   |   |   |   |   |    |    |    |
| Lineal of main and laying, stop and sluice cocks                     | . | . | . | . | . | . | . | . | . | .  | .  | .  |
| Compensation for damage to land                                      | . | . | . | . | . | . | . | . | . | .  | .  | .  |
| Service-pipes in the town                                            | . | . | . | . | . | . | . | . | . | .  | .  | .  |

*Sewerage.*

£. s. d.

Digging and filling in ground—

|                                                                                                                   |   |       |   |   |
|-------------------------------------------------------------------------------------------------------------------|---|-------|---|---|
| Providing and laying 6, 9, 12, and 15 inch in permeable stone-ware glazed pipes, with branches and bends. . . . . | } | 1,750 | 0 | 0 |
| Making good paving where necessary . . . . .                                                                      |   |       |   |   |

House drainage and water apparatus to a four-roomed house—

|                                                                                  |   |   |   |   |
|----------------------------------------------------------------------------------|---|---|---|---|
| Digging in yards and making good paving . . . . .                                | } | 2 | 7 | 3 |
| 4-inch sub-main with junctions and laying . . . . .                              |   |   |   |   |
| Sink, including vertical sink-pipe, bends and junctions with sub-mains . . . . . |   |   |   |   |
| Closet-pan and syphon junction with sub-main and vertical pipe . . . . .         |   |   |   |   |
| Rain-water pipes . . . . .                                                       |   |   |   |   |
| Heads-junction with drain, yard sink and syphon . . . . .                        |   |   |   |   |

Water supply—

|                                                     |   |   |    |   |
|-----------------------------------------------------|---|---|----|---|
| 2-inch pipe from sub-main . . . . .                 | } | 0 | 17 | 8 |
| Bend, plug, and box . . . . .                       |   |   |    |   |
| ½-inch lead service from sub-main to back of house  |   |   |    |   |
| Ditto to water-closet . . . . .                     |   |   |    |   |
| Branches to sink-cock to ditto . . . . .            |   |   |    |   |
| Branches to yard joints, and labour-cock to ditto   |   |   |    |   |
| Branches to closet-joints and labour-cocks to ditto |   |   |    |   |

Surface of court—

|                                          |   |   |   |    |
|------------------------------------------|---|---|---|----|
| Sink and syphon . . . . .                | } | 0 | 4 | 5½ |
| Bend . . . . .                           |   |   |   |    |
| Drain . . . . .                          |   |   |   |    |
| Junction with main . . . . .             |   |   |   |    |
| Digging and making good ground . . . . . |   |   |   |    |

*Summary.*

|                       | £.     | s. | d. |
|-----------------------|--------|----|----|
| Water-works . . . . . | 3,457  | 0  | 0  |
| Sewerage . . . . .    | 1,750  | 0  | 0  |
| Total . . . . .       | £5,207 | 0  | 0  |

£. s. d.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |     |    |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----|----|---|
| Taking the capital for the entire set of public works on interest for a period of 30 years, repayable by five equal instalments, with interest thereon at 5 per cent. The average annual charge to be distributed over the property participating in the advantages for the public sewerage, and for the water supply, a rate not exceeding $1\frac{1}{2}d.$ per week for the smaller class tenements, with a proportionate charge for the larger houses, will amount to . . . . . |  | 314 | 11 | 7 |
| Income to be derived from the application of sewage for manure, estimated at only one-fourth of the sum named by Smith of Deanston, will amount to . . . . .                                                                                                                                                                                                                                                                                                                       |  | 400 | 0  | 0 |
| But from this sum, the interest, including wear and tear of the distributing apparatus, must be deducted.                                                                                                                                                                                                                                                                                                                                                                          |  |     |    |   |
| The apparatus or plant necessary for the application of the liquid manure amounts to about 37s. per acre, where the ground admits of its application by gravitation, and to a further sum of about 5s. per acre, if engine power and stand-pipe become necessary.                                                                                                                                                                                                                  |  |     |    |   |
| Assuming the sewage and refuse of the town is equal to the manuring of 1,000 acres of land in its immediate proximity, and that engine power is necessary for its distribution, it follows that the cost of the distributing apparatus would be equivalent to an annual charge of .                                                                                                                                                                                                |  |     |    |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | 126 | 17 | 0 |

CONCLUSIONS.—From the evidence collected, and a personal inspection of those dwellings pointed out by the medical men as the seats of fever, &c., I am strongly of opinion that a large amount of sickness and excess of premature mortality, with the expenditure contingent thereon, may be greatly alleviated, and the comforts of the inhabitants generally increased, by the application of the Public Health Act to the parish of New Sleaford.

In furtherance of this object, as the line of water-shed lies considerably beyond the parochial boundary of the district from whence the petition was presented, I advise that powers be taken:—

1. For constituting the area within the water-shed, the district for purposes of general drainage, pursuant to the provisions of the Public Health Act of 1848; for which purpose it will be necessary to adopt a new boundary.

2. For providing, and laying on in every house and tenement, a supply of water (upon the constant system) for domestic use,

cleansing, and household purposes, and carrying off floatable refuse, and placing fire-plugs throughout the town, and supplies of water kept on night and day for the extinction of fires.

3. For laying down tubular drains to all houses, court-yards, areas, and other places, so as to ensure a complete removal of all foul water, &c.

4. For converting existing privies, if properly situated, into water-closets, and where neither privies nor water-closets exist, for erecting the same.

5. For cleansing carriage and footways, dedicated as well as undedicated, and where practicable, by means of jets; so as to prevent accumulations of mud and filth.

6. For converting all blind alleys, wherever practicable, into thoroughfares, or so that noxious vapours may be dissipated by currents of air, or diluted by access to large open spaces.

7. For a complete system of ventilation of all parochial and other schools for the children of the poor, also for preventing overcrowding in lodging-houses, regulating the numbers of persons sleeping in each room.

8. For providing and laying out a new cemetery ground.

Upon a careful consideration of the several matters to which my inquiry had reference, I am of opinion that the remedies suggested are essential, and if the plans are made and carried out under a proper supervision, and no part omitted, a positive saving will accrue to the inhabitants, and the social condition of the working class be materially improved.

WHEREUPON I RECOMMEND,

That the Public Health Act, 1848, except the sections 50 and 96, be applied to the parish of New Sleaford, in the county of Lincoln.

That the Local Board of Health, to be elected under the Public Health Act, consist of nine persons, and the entire number be elected for the said parish.

That one-third in number of the said Local Board go out of office on the 25th day of March in the year subsequent to the year of election.

That every person, at the time of his election as member of the Local Board, and so long as he shall continue in office, by virtue of such election, be resident as in the said Public Health Act, 1848, is required, and be seized and possessed of real or personal estate, or both, to the value of 1,000*l.*, or resident and rated to the relief of the poor of some township or place, of which part is within the said district (parish of New Sleaford) upon an annual value of not less than 30*l.*

That the 14 days' notice of qualification required by the Public Health Act, 1848, be given by owners of property (in order to entitle them to vote at the said first election), to the person who shall be nominated to conduct the said election.

I have the honour to be,

My Lords and Gentlemen,

Your obedient humble servant,

WILLIAM RANGER,

*Superintending Inspector.*

*To the General Board of Health,*

*&c.*

*&c.*

*&c.*